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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. HIM-PT002.2

First Inventor or Application Identifier Richard B. Himmelstein

Title COMMUNICATION DEVICE FOR EFFICIENTLY ACCESSING INTERNET RESOURCES

Express Mail Label No. EL566348775

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ \* Fee Transmittal Form (e.g., PTO/SB/17)  
 (Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 37]  
 (preferred arrangement set forth below)
- Descriptive title of the Invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to Microfiche Appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 22]
4. Oath or Declaration [Total Pages 2]
- a. ☒ Newly executed (original or copy)
- b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))  
 (for continuation/divisional with Box 16 completed)
- i. ☐ DELETION OF INVENTOR(S)  
 Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

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## ADDRESS TO:

Assistant Commissioner for Patents  
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5. ☐ Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
- a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement of Power of Attorney (when there is an assignee)
9. ☐ English Translation Document (if applicable)
10. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
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## 16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☒ Continuation-in-part (CIP) of prior application No: 60/143,982 & 60/174,561

Prior application information: Examiner N/A Group / Art Unit: N/A

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

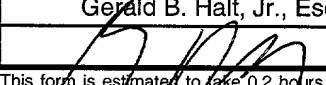
## 17. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label

(Insert Customer No. or Attach bar code label here)

or ☒ Correspondence address below

Name	Gerald B. Halt, Jr., Esquire				
	Volpe and Koenig, P.C.				
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	1617 John F. Kennedy Blvd.				
City	Philadelphia	State	PA	Zip Code	19103
Country	U.S.A.	Telephone	215-568-6400	Fax	215-568-6499

Name (Print/Type)	Gerald B. Halt, Jr., Esquire	Registration No. (Attorney/Agent)	37,633
Signature		Date	6/1/00

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**COMMUNICATION DEVICE FOR  
EFFICIENTLY ACCESSING INTERNET RESOURCES**

**BACKGROUND**

The present invention is a system for permitting internet users to access network resources more efficiently. Particularly, the present invention is a system which uses unique individual identifiers, such as a phone number or facsimile number, as the primary search keyword to access internet resources and selectively access additional internet resources as desired by the individual. Using the system, an individual may also perform various functions such as placing a telephone call, or sending a fax or e-mail with a single selection (i.e., "one click"). This permits individuals to browse or otherwise "surf the net" faster.

The internet is a global computer network that connects all different types of operating systems and networks. It not only provides the physical backbone connections among networks, but also establishes the standard formats that enable different networks to communicate and share information. For example, the simple mail transfer protocol (SMTP) is the internet e-mail standard that specifies the format of a message, so that a user on one computer network may successfully transfer mail to a user on another network. Without the SMTP, different networks which create their own e-mail message formats could only be understood if the e-mail receiver used the same type of network as the sender, or the receiving network had a plurality of different e-mail format converters to interpret different formats of incoming e-mail messages.

Each network e-mail application which uses the internet converts mail originating on the network from the format that the network uses into SMTP format before transmission over the internet, and each receiving e-mail application converts the SMTP formatted e-mail into its format. Therefore, instead of having many different types of e-mail message converters for each different e-mail format, different network e-mail applications can communicate using a single SMTP format converter. The same principle also be can applied to transferring data files among different networks.

Electronic mail is the most widely used application on the internet. Each receiver has to have an unique internet e-mail address for proper e-mail delivery. An internet user typically establishes an e-mail address by subscribing to an internet service from an internet service provider (ISP) who provides the host and gateway functions to the internet for the user. An ISP can be a university, a government entity, a private corporation or a commercial service provider. The provider will assign each user a unique e-mail address. No two users should have the same e-mail address unless they desire to be treated as a single entity by the internet.

The characteristics of e-mail address syntax and structure are well defined. An e-mail address consists of a unique combination of several terms. For example, when John Smith signs up with America Online® (AOL) as his internet service provider, John Smith will select a first portion of his e-mail address and will be assigned a second portion of his e-mail address. If John Smith's e-mail address is JSMITH@aol.com;"aol" is the abbreviation of

America Online; "com" indicates that America Online is a commercial website; and JSMITH is the local part of the e-mail address. E-mail that is sent to JSMITH@aol.com will first be forwarded to the host AOL domain, aol.com, and then AOL will further delivery the e-mail to the mailbox JSMITH. Although the domain part plus the local part of an e-mail address such as JSMITH@aol.com is a much easier format to memorize than the actual 32 bit internet mailbox address, (as dotted decimal notation 247.012.123.114), several difficulties still exist.

First, there is no consistent rule for naming a local part of a user's mailbox. In the AOL example, the local part is made of the first character of John's first name in combination with his last name, i.e., JSMITH. Once JSMITH is assigned to John on the aol.com domain, other John Smiths, a Joan Smith or a Joe Smith on the aol.com domain must choose a user name other than JSMITH to distinguish between themselves. Moreover, thousands of other ISPs use different ways to name their users' local part. It is almost impossible to guess the local part of a user even if his or her name is known. Non-alphanumeric characters, such as @, ^ or % could be used in the e-mail address. Foreign ISPs and foreign e-mail addresses can also have non-English characters. Accordingly, it is difficult for an internet user to memorize a plurality of different e-mail addresses.

In contrast, due to their ubiquitous use and uniformity, phone numbers and facsimile numbers consist of a universally accepted digital number scheme which makes the numbers easier to remember. Additionally, phone numbers and their owners are readily available

through many information sources including phone books, phone number CDs or even internet sites that provide such information.

There are several prior art systems which attempt to help an internet user access the address of other internet users more easily. For example, U.S. Patent No. 5,826,039 to Jones discloses a universal networking directory service. A sender provides information regarding a particular receiver, such as the person's name, city and the state of residency, and the system retrieves the receiver's proper internet address. The sender can then use this address to contact the receiver.

U.S. Patent No. 5,850,433 to Rondeau discloses an online electronic directory service. The service includes a dedicated server and a database similar to the paper yellow pages, which permit a user calling the database to be connected directly to the selected entity. A user can retrieve information from the database by entering different search parameters. Once the user reviews the results of the particular query and selects an entity, the server automatically places a telephone call to the select entity.

U.S. Patent No. 5,778,367 to Wesinger, Jr., et al discloses a directory service which lets each individual user forward information to be electronically published. The information is automatically classified and then stored in a database. Other users might then search the database by specifying different parameters including name, title, phone number, facsimile number and e-mail address. The users fill in information regarding their fields of

interest and the directory service returns entries having matching information for those fields.

U.S. Patent No. 5,590,178 to Murakane discloses a service which links an e-mail system with a telephone system. The system retrieves all e-mail corresponding to a particular phone number to be automatically displayed when a telephone call to the particular phone number is placed or received.

U.S. Patent No. 5,812,776 to Gifford discloses a method for a user to access web pages by either using a telephone number or descriptive term relating to the searching company or product. However, this system only retrieves the web page without further processing or analysis.

Although many of these prior art systems permit a user to access websites based upon selected information, these systems do not permit users to capture selected portions of those websites for further processing.

## SUMMARY

The present invention includes a data table that can be customizable by a user prior to accessing the internet or after accessing the internet. The user may use a simple keyword, such as a telephone number or facsimile number, to begin the search of a database or multiple databases. Once the keyword has retrieved the proper information, the system populates the table. This permits the user to easily access the internet and retrieve e-mail

addresses or other relevant information by providing a phone number, facsimile number or other information relating to the particular entity.

Using the data table, the system displays all information related to the keyword input as unique individual identifiers such as e-mail, phone, facsimile number or website address.

5 Selecting one of the unique individual identifiers prompts the system to automatically invoke further action, such as dialing a phone number.

Accordingly, it is an objective of the present invention to use a keyword, such as a phone number or facsimile number, as the primary search keyword to retrieve information from the internet and store the information in a format desired by the user.

## 10 BRIEF DESCRIPTION OF THE DRAWINGS

**Figure 1** is an overview of the internet.

**Figure 2A** is a flow diagram illustrating a regular e-mail sending procedure.

15 **Figure 2B** is a diagram illustrating the different ways to retrieve e-mail address by the prior art and the present invention.

**Figures 3A-3F** are diagrams illustrating internet database access through phone number or facsimile number search.

20 **Figures 4A-4G** are detailed screen displays of a user interface to the present invention.

**Figures 5A-5F** are detailed screen displays of the system including a data table for selectively retrieving and displaying data in accordance with the present invention.



## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention will be described with reference to the drawing figures where like numerals represent like elements throughout.

5 Referring to **Figure 1**, a plurality of networks **15, 25, 35** and web pages **40** and **50** are shown connected to the internet **5**. A first user **10** is a resident on a first network **15** and a second user **20** is a resident on a second network **25**. Even if the two networks **15, 25** are different types of networks, (for example if network **15** is an Ethernet-based Novell network and network **25** is a token ring-based Microsoft Window NT network), utilizing the internet **5** the users **10, 20** may communicate via e-mail and perform file transfers. This is achieved by each network **15, 25, 35** converting outgoing data into a standard format such as SMTP, and converting incoming data from the standard format into the format for the particular network **15, 25, 35**. By specifying a particular e-mail address or a designated web address, an internet user **10, 20** may compose and transmit an e-mail and the internet **5** will automatically route the e-mail to the particular user, or automatically route the desired content of the web page **40, 50** to the requesting user.

The present invention is a system which can run as a module or as part of an application utilized by an internet service provider (ISP), may interface with various kinds of software applications or may run as a "stand alone" package. It may be accessed using various interfacing devices such as a keyboard and mouse. For example, in one embodiment, selecting an icon displayed on a monitor screen activates the present invention.

Referring to the flow diagram of **Figure 2A**, utilizing a typical e-mail application, a sender logs onto the internet (**step 105**) by issuing an internet login request with his/her computer device to the ISP. The ISP verifies the validity of the user ID and password (**step 110**). If either the user ID or the password are incorrect (**step 115**), no access to the internet will be granted by the ISP. If the user ID and password are correct, the ISP connects the user to the internet **5**. When the sender is ready to send an e-mail, the sender invokes the e-mail application (**step 120**) and creates a new e-mail (**step 125**) or replies to a received e-mail (**step 130**). The sender can directly enter the receiver's e-mail address if it is known (**step 140**). Otherwise, the sender can open and view an existing e-mail database (**step 145**), such as an address book, to determine if it contains the receiver's e-mail address. If the receiver's e-mail address is found (**step 160**), the sender writes the message (**step 165**) and sends the e-mail (**step 170**).

If the sender does not know, and cannot find the receiver's e-mail address from the database of e-mail addresses, then the sender has three alternatives (**step 155**). As shown in **Figure 2B**, in the first alternative the e-mail process is abandoned (**step 160**). In the second alternative the sender may access an online directory service (**step 165**) and retrieve the corresponding e-mail address by specifying various keywords (**step 166**) and searching a database (**step 167**). The keywords can be the receiver's name, address, URL or other unique identifying information. This alternative can be invoked from a calling program whereby the online directory service will return the proper e-mail address to the sender (**step**

168). The third alternative activates the present invention (**step 170**), whereby the user inputs the receiver's phone number or facsimile number as the keyphrase (**step 171**) to search the database for the receiver's e-mail address (**step 172**). The system then returns the search results to the user (**step 173**) to populate the data table. This procedure will be described in greater detail hereinafter.

Referring to **Figure 3A**, the system of the present invention has "intelligent" features which makes the search for an e-mail address or other unique individual identifiers transparent to the user. For example, instead of using separate input fields for e-mail addresses, phone numbers, facsimile numbers or website addresses, the screen display has only a single input field **181**. A user can type in an e-mail address, website address, phone number or facsimile number into the input field, then select the **GO 182** button in **Figure 3A**. If the search results in more than one match based on more than one unique keyword selected, the system may prompt the user to narrow down or select one of the matches. For example, if the user selects a keyword such as 1-800-CALL-NOW, the system may return with two different results: 1) a phone number; and 2) a website. The user is prompted to choose whether the key phrase is a website or a phone number. The system could then do a search based on the additional information and search again. Alternatively, the system may display all selections for the user to choose.

Referring to **Figure 3B**, the user can further input area code **183** or country code **184** for this particular phone or facsimile number as an option and select the GO button **185** to invoke the application.

The present invention will search all relevant databases and retrieve relevant information that matches the specified key phrase. For example, a user inputs John Smith's phone number, 601-212-1125 (the dashes "-" can be created automatically by the system), in the input field **181** then selects the **GO** button **182** and the system searches for the phone number.

Referring to **Figure 3C**, the system retrieves relevant information from one or multiple databases and displays all information that exists for the individual in the customized table including John's name, John Smith's e-mail address, phone number and facsimile number **188-195**. The system retrieves this information based on the headings of the retrieve and display table. Because John Smith doesn't have a website address, the table indicates that the website not available **195**. In one embodiment, a user can create different display tables or modify existing ones. Alternatively, the invention may display the information without a table.

A simplified retrieve and display table **300** is shown in **Table 1**. This retrieve and display table includes fields such as name, e-mail address, mobile phone number, home phone number, work phone number, facsimile number and home address.

Name
E-Mail
Mobile Phone Number
Phone Number (Home)
Phone Number (Work)
Fax Number
Home Address

**Table 1**

If a user selected Table 1 as the retrieve and display table and inputs John's phone number or facsimile number as the search keyword, the system searches through relevant databases and retrieves John's name, e-mail address, mobile phone number, home phone number, work phone number, facsimile number and home address and displays them as shown in **Figure 3D**. If a displayed item can lead to further action, the system indicates such. One manner is having a circular area displayed in front of the item which a user can select to invoke the further action. For example, referring back to **Figure 3D**, John's e-mail address, mobile phone number, home phone number, work phone number and facsimile number all have the circular area **196, 197, 198** and **199** which precedes each item. A user can decide whether he wants to send John an e-mail, call John at his home, work or mobile phone or send a facsimile (by downloading the file to be faxed), by selecting the corresponding circular area. Alternatively, red or blue contrasting lettering may be used to indicate further action is available by clicking on the same.

5 The system interfaces with software modules that do the activity such as e-mail, call  
by phone or send a facsimile, or may incorporate its own module to do such. If a user and  
an individual being called both have equipment that permits video web phone applications,  
the system may automatically invoke the application in such a manner. The system permits  
an individual to use their e-mail address as their phone number or fax number, thereby  
10 permitting individuals to call or fax other individuals over the internet. The system can use  
an e-mail address as the keyword to then allow someone to chose options such as "phone",  
"facsimile" etc. The system can also use an individual's e-mail address to provide their  
corresponding physical address, such as their home address. The present invention retrieves  
information from relevant databases, either from the internet or a local computer, and  
displays results according to the retrieve and display table. The system can be expanded to  
include other unique identifiers such as pager numbers, cell phone numbers, vacation home  
phone numbers. If an item includes more than one selection, for example if there are  
multiple vacation phone numbers for the particular user, the system can list all possible  
15 selections and provide a pull down manual for further selections.

The present invention is flexible in permitting a user to invoke the system even if the  
user is using an application, for example, a user is in the middle of composing an e-mail.  
The same user can invoke the system to make a phone call or send a facsimile to the same  
or other designations.

Referring back to **Figure 3C**, another embodiment of the system, will invoke other applications either to direct dial the selected phone number for the user, dial and send a facsimile to the selected facsimile number, access the website or invoke an e-mail application. In the case where dialing a phone number or facsimile number is selected, if the phone number or facsimile number is shared by one organization, the organization directory can be further retrieved if the user has permission to access. This will be explained in greater detail below.

Referring to **Figure 3E**, for example, a user inputs company XYZ's main phone number or facsimile number as the search keyword (i.e., unique individual identifier), the system displays a retrieved list of individuals at the organization with their individual e-mail addresses, and their title or specific information. Each name or department may be listed and followed by a field that provides basic information such as one's title, location, department etc. This information field may be maintained and size altered to accommodate a person's or company's needs. For example, one person's title may be "customer service". The user can select the desired method of contact such as selecting an e-mail address from the member list of the organization. Of course, the retrieved and displayed information is based on the user requested and the restriction a data base owner/company puts on its database. If an individual or organization desires to be "unpublished" system can allow such.

For example, a user searches the main phone number of XYZ company inquiring a home address and e-mail address. Even though XYZ company has all of its employees'

home addresses, XYZ company only allows certain designated employees' names and their e-mail addresses to be accessed, not their home address unless a person requesting the information has "priority access". Therefore, the user can see the display of employee names and e-mail addresses, while employees' home addresses are not available as shown in **Figure**

5 **3E.** Individuals or companies setting up their database may determine different priority access levels for family, friends or employees. The system allows this to be set up on an individual basis, family basis or employee basis and can require for security reasons that a user accessing the database information to submit his e-mail address or password for access.

10 If XYZ is a franchise or chain store, the retrieved information can include information about other local, regional or national stores, such as location, phone numbers or website address, as shown in **Figure 3F.** For example, if the user inputs one of the phone numbers of BEST BUY electronic stores in the Philadelphia area, the system will retrieve the address, phone number, and facsimile number of the particular BEST BUY store and display them. The system will phrase the user's input to decide whether the input is an e-mail, phone number, 15 facsimile number or website address. If the user only entered a seven digit number, phone number or facsimile number then selected the phone or facsimile buttons, the system automatically prompts for the area code. A user can use the area code or country code option to specify the area where the search shall cover. The system may allow all area codes to be selected by input wildcard "\*" in the area code field.



In an alternative embodiment, cell phones, home phones, vacation phones, separate work phones for husbands and wives, pagers and all e-mail addresses (i.e., work or home) may all be included in the table as well. Any of these items, or future "communication" devices, could be sorted under one of five or more designated headings as follows: 1) name; 2) e-mail address; 3) website address; 4) phone number; and 5) facsimile number. For example, if government, medical or banking institutions chose to use an individuals' social security number as the major search key phrase, the system would interface with their database and, using the search key phrase, retrieve the requested information. For example, banks have various financial information sorted by credit cards, mortgages, bank accounts etc. Medical information can sort by entire medical history by doctor or types of injuries or diseases/sicknesses from existing internet database organized with other key phrases.

The present invention permits a user to "surf the net" faster by providing an improved way of accessing the internet for general uses. If a user knows one particular information about a company, they can retrieve the company's phone number, facsimile number, e-mail number and website address, upon entering the particular information or description (i.e., unique individual identifier). If any information is not available for access or does not exist there, the system responds with either information is unavailable message or information may not exist message to the user.

If multiple "main" phone numbers, facsimile numbers, e-mail addresses or web addresses are retrieved, the system will first display phone number, then facsimile number,

e-mail address and website address sorted in alphabetical order, but will first display 800 numbers and ".com" website addresses if they exist, and advise a user to select an option (down arrow) for more. If a user selects to send e-mail, a pull down menu can provide the user with an alphabetical sort of all individuals names with their home or work e-mail addresses along with a brief description such as name, title and location (if there are multiple business locations).

An alternative embodiment of the invention having a graphical user interface (GUI) is shown in **Figure 4A**. An icon **210** displayed on a monitor screen **205** represents the present invention and is used to invoke the system. Assuming that the database of the present invention and/or the local database have been established, by directing a pointer to the icon **210** and selecting the icon, the system is invoked. A first embodiment of the invention using the GUI is shown in **Figure 4B**. Referring back to **Figure 4B**, the database can be selected by directly entering the name of the database, or selecting from an ISP database or a local database. By pointing and clicking on the option pull down menu area **235**, the list of databases **235** will be displayed as shown in **Figure 4G**. The user can select the database from which he or she will retrieve information. Once the user completes the selection of both the key phrase and the database, the user can select the **GO** icon **240**. The results of the search based on the specified web address, e-mail address, phone number or facsimile number will be displayed **245** as shown in **Figure 4E**. The user can view the

display and select the correct entity. Alternatively, the system may, transparent to the user, merge all databases into one so that the user does not have to choose a particular database.

For example, if one database is created for a geographical area such as Philadelphia or New York, the system may merge the data and store in a single database that is searchable and retrievable. Optionally, the system may search all databases without being required to copy or reclass the information. Other valuable classifications may also be made, (such as a database for attorneys, a database for accountants, a database for retail companies, a database for technical companies and all other types of industries).

The system may provide the first level of information from its own database or subdatabase, a local database and, if additional information is requested, link to a company's database at the second level. The system may obtain the first level of information by using web-traversing program called robots or spiders which follow link after link within webpages across the internet. The web-traversing programs catalog documents and store information for transmission to a parent database, where the information is sifted, categorized and stored. After a web-traversing program has run, the database compiled through the efforts of the robots and spiders is searched using a database management system. Using keywords or search terms provided by a user, our system's database locates matches.

Referring back to **Figure 4B**, the screen displayed **215** requires two inputs from the user: the key phrase **220** and the database to be searched **230**. The key phrase **220** can be



changes in the table as the user retrieves new webpages. Optionally, once the relating information has been retrieved from the database and displayed on the screen, the user can select the desired one, then another display menu will pop up. Of course, a user can search and retrieve relevant information based on the content of the customized retrieve and display table. Nevertheless, in this example, only e-mail, facsimile numbers, phone numbers and website addresses are requested and displayed. The pop up menu offers four different selections in this example. A user can either send an e-mail by selecting the e-mail option, or sending a facsimile by selecting the facsimile selection, by connecting the phone call to the receiver, or, at last, connecting to the worldwide website by pointing and clicking the corresponding menu selections. If the retrieve and display is customized to display local telephone numbers, fax numbers, e-mail numbers, etc., the system in conjunction with the ISP and website can do such.

Referring to **Figure 5A**, the system utilizes key phrases **500** and a retrieve and display table **502** in order to improve the manner in which a user accesses the internet. The criteria for the search and the format of the information resulting therefrom can be entirely user-defined. The search criteria are based upon the key phrase **500**. The results of the search populate the retrieve and display table **502** comprising columns **504** and rows **502**. The columns **504<sub>a-n</sub>** may be defined by the user as shown in **Figure 5B**.

Referring to **Figure 5B**, the user accesses a screen which lists both the key phrase **500** and table headings **510**. As the user selects the different table headings **510**, (for example,

business phone number, extension, name and title), the corresponding columns **504<sub>a-d</sub>** appear in the table **502**. The user can select from the plurality of predefined table headings **510**, or may create their own headings and customize the table **502** according to their needs. In this manner, the system permits users to use one or more key phrases to obtain results in a systematic and organized fashion according to their needs. This is significantly different than present search engines which provide results in descending order of matching with the key words. The system will be explained in greater detail with reference to the following example.

Referring to **Figure 5C**, the key phrase **500** that has been selected is Cisco. The table **502** includes the table headings **510**, (shown in **Figure 5B**), name, business facsimile number, homepage, e-mail address, business phone number and stock symbol which provide the headings for the six columns **504<sub>a-f</sub>**. After the user has input Cisco for the key phrase **500** and has created the table **502**, they can select among three options within the activity menu **520**. As will be explained in further detail, the three options are ADDITIONAL INFORMATION **522**, GO THERE (i.e., perform function) **524**, and SEARCH **526**. In order to initiate the search, the cursor **528** is moved to the SEARCH button **526** and selected. The search could also be automatic upon highlighting a specific cell and depressing the "return" button on the keyboard or double-clicking the mouse on the specific cell. Referring to **Figure 5D**, the search results populate the cells in the first row **508<sub>a</sub>**. As shown, a search is performed for the information that most closely matches the key phrase and also the



select a particular cell, such as cell **552**, and double-click on it to perform the particular function, which in this case is sending an e-mail.

The user may also perform a subsearch, which uses the results of the earlier searches to further refine the search. For example, referring again to **Figure 5E**, once all of the information for a particular key phrase has been obtained, the user may wish to further refine the results of their search. If the user desires to get more information regarding the customer service department's facsimile number, they move the cursor to the customer service cell **531** in column **504<sub>b</sub>**, in row **508<sub>d</sub>**. If the user desires more information regarding the customer service department, they can select cell **530** which becomes highlighted as shown, the cursor **528** is moved to the SEARCH button **526**. As shown, the SEARCH button **526** has changed to indicate that the system is undertaking a further search using a new selected key phrase. The KEY PHRASE FURTHER SEARCH button **526** now includes the further key phrase "customer service". Accordingly, the KEY PHRASE FURTHER SEARCH button **526** is selected which results in the table shown in **Figure 5F**. Since the key phrase is now customer service, the system populates the table **502** with the results of the that key word search. As shown in **Figure 5F**, the user can also modify the table **502** before or after they depress the KEY PHRASE FURTHER SEARCH button **526**. In the example shown in **Figures 5E** and **5F**, the user deleted column **504<sub>f</sub>** including stock symbol and added the column **504<sub>h</sub>** including the extension number, and deleted column **504<sub>c</sub>** for the homepage and added column **504<sub>i</sub>** with the title of the person. Accordingly, a table shown in **Figure**



**5F** shows all of the information that user believes is relevant for their search on the personnel within the customer service department of Cisco.

As understood by those of skill in the art, the system may display a single row **508** at a time, (for example, row **508<sub>a</sub>** shown in Figure 5E), and provide up and down arrows to scroll through all of the choices. Alternatively, only the cells that are populated are returned to the user. If the user would like to select a particular person to speak to, such as Kate Skubin, the group director of customer service, the user can move the cursor **528** to column **504<sub>h</sub>** which lists the extension numbers for all of the employees. The user can then select the cell in first row **502<sub>a</sub>** of that column which lists the extension number for Ms. Skubin. Once this cell **542** has been highlighted, the cursor is then moved down to the GO THERE button **524**. The GO THERE button **524** will change as shown in **Figure 5F** to include the words "click to call". It should be noted that the selection of a particular cell for an extension will dial that extension if the user is on the same company phone system. Otherwise, the user would select a column heading such as direct inward dial (DID) number. This permits customers and other people "outside" the company's phone system to contact the personnel directly. It should be noted that the GO THERE button **524** will change depending on the action to be taken. For example, when the GO THERE button **524** is selected, the system places a call directly with Ms. Skubin. In the same manner, Ms. Skubin may be e-mailed or faxed depending upon the cell which is selected.

Although the present invention is designed to search and retrieve information over the internet, one embodiment of the invention builds a local database for search and retrieval using the standard selection heading shown in **Figure 5B**. As explained earlier, web crawlers, robots or spiders are used to populate the main level of the database. The main level will be referred to hereinafter as "level 1". This can be graphically represented by **508<sub>a</sub>** in **Figure 5D**. For example, a webcrawler searching the web and accessing webpages may be able to find a company's name, e-mail address, home page and phone number. The system may access other unrelated databases, such as an on-line financial database, to ascertain other information regarding the company, such as the company's stock symbol.

Alternatively, the data may be selectively input by companies that wish to participate and utilize the database services. For example, the data may be input manually by a company's employee, subcontractors and agents, and forwarded enmasse to a central website maintained for the purposes of creating a master database. The information in the database can then be available to all users to download to their local database. If a company participates in this manner, it may select from among the table headings in **Figure 5B** and can create new headings. If standard table headings such as shown in **Figure 5B** are not used, the headings created by a particular company must be correlated with the standard headings or new standard headings created to accommodate the entries by that company. Accordingly, the system provides the option of providing users with blank tables and

selecting from among standardized headings, or permitting users to create their own headings.

For example, if a company wanted to have "president's office" on the first level with a phone number, fax number and e-mail address, they can customize the table headings prior to entering the information. The user can select "create customized heading" as shown in the table headings 510 of Figure 5B. Alternatively, when a user is searching the information from a particular company, the table headings may note which field, if any, were created by the actual company. Further, when searching, a user can query the system to provide all applicable table headings available for a particular keyword (i.e., person or company).

When the system provides a "blank table" for the user to utilize, the system provides a level 1 table with a standard heading, (i.e., a table with multiple columns and one row). The table may then be modified and further customized as desired. Down arrows may be used to add subsequent levels, (i.e., additional rows). The system may only permit one row for level 1 and multiple rows of information for subsequent levels. These rows may correspond to a division, department or other organizational structure pertaining to the company.

Subsequent levels for a company will be for smaller and smaller business units until the names of individual personnel populate the rows. Along with the individual names, the user also creates each individual's title. Basically, the system may permit users to switch

from column table headings to row table headings and vice versa. Column table headings  
510 are shown in **Figure 5B**. Row table headings 508<sub>a-d</sub> are shown in **Figure 5E**. Upon  
populating a database, the flexibility between the column table headings 510 and the row  
table headings 508<sub>a-d</sub> permits users to enter information into the blank table by either the row  
5 or the column, whichever is more convenient for the user. If a user querying the system had  
the proper access, the user may have the system provide all column headings or row  
headings available for a particular keyword (i.e., company) to allow the user to quickly  
retrieve or process the information desired.

The centralized database, for example a database accessible via a website, can be  
10 maintained by a centralized database management staff or by users with proper passwords.  
Individual companies may create and maintain their own local database, but permit the  
database to be searched, via a link to the website. If the centralized database is linked in  
such a manner to an individual company's database, the system automatically searches the  
company's database when users query for information from this database. If a company  
15 maintains their own database linked to the centralized database, the centralized database  
management staff does not have the ability to change the actual data.

When a user wants to input information into the centralized database, they must be  
provided with access to the database. The system may be accessed directly by the user or  
by following a link to the website. For example, one website may have the URL  
20 ReachPeople.com. The name Reach People™ is a trademark of the applicant.



staff), all of the data associated with the particular transaction number is purged from the system.

The present invention also provides a method for changing information in the centralized database. The user enters their username and password, and inputs the transaction number. Should the user not provide the correct transaction number and password, the user cannot gain access to making changes. The user will be able to edit all data associated with the transaction number. The system will track and store all data, associated transaction numbers and times, dates and usernames that changed the data. This ensures direct accountability for all data changes. After the user edits the data, the user clicks on "update".

In an alternative embodiment, the system may permit information to be retrieved from, or sent from, anyone without placing any restriction on the user. In this embodiment, a user may become an information supplier and enter unreliable information into the system through the internet.

The system has the ability to run various reports and delete selected information at any time as measures to verify the accuracy of supplied information. The system can automatically review it's data files for inconsistency. The system can automatically use available communication means to contact the information supplier about the inconsistency of the information and request the information supplier confirm the accuracy of the supplied information. For example, if an individual is contacted by an e-mail for the confirmation,



is not central to the present invention. A local database may remain only in the user's local computer system. Alternatively, the database may be maintained at the user's internet service provider but may only be accessible when the user is online. A user may set certain restrictions and block selected information, such as credit card information from further modifications. Generally, it can specify certain mandatory basic information that a user has to supply under certain circumstances. The basic information such as the user's name, address, telephone number, "ship to" address (if different then the user's address), credit card number, e-mail address, zip code for mailing purposes, personal profile such as likes, dislikes, age, nicknames, sports, etc.

For example, for online shopping, a user must provide credit card information upon placing an order. In essence, the system can use an established standard format to overlay the data file information into the various fields of a particular website, upon an icon being selected (for example, when a user purchases something). The website may display all information automatically filled in and/or may only prompt the fields that did not match the data file fields, consequently remaining "blank", allowing the user to fill in manually. The term "table" as used in the present invention represents array of key phrases, since each cell in a table may form the basis of a further search.

In an alternative embodiment, the retrieve and display table may continually appear or be requested by the user to appear when the user is "surfing the web". Once the user invokes the software, the content of the retrieve and display table will be automatically



retrieved and updated accordingly. If the user wanted to e-mail, phone or facsimile, the user would simply click the corresponding icon to do so.

It should be noted that a "wildcard" can be used as part of searching phone numbers or facsimile numbers. For example, telephone number 215-756-32\*\* can be used as keyword to search all the phone numbers or facsimile numbers between 215-756-3200 to 215-756-3299. Or if 215-756-3\*45 is used for the keyword, then the system will retrieve the 10 phone number's or facsimile number's related to 3045, 3145, 3245, ...,3945.

Although the input devices such as keyboard and mouse are used in this specification for explanation purpose, other input methods or devices such as voice input device or touch screen device can also be used with the present invention.

The present invention can be used as the base for a future internet search engine or directory. A user, by providing phone numbers or facsimile numbers can quickly access all information on the internet and retrieve the information as he specified. Therefore, a user can surf the internet more efficiently.

Although the invention has been described in part by making detailed reference to the preferred embodiment, such detail is intended to be instructive rather than restrictive. It will be appreciated by those skilled in the art that many variations may be made in the structure and mode of operation without departing from the spirit and scope of the invention as disclosed in the teachings herein.

\*

\*

\*

## CLAIMS

What is claimed is:

1. A system for accessing and retrieving information on the internet comprising:  
a data table comprising:

a plurality of columns, each of said columns being selectively definable by a  
column heading; and

5 at least one row having a plurality of cells corresponding to said plurality of  
columns, said row for storing information defined by said plurality of column headings;

a key phrase field for defining a desired search; and

a search unit for accessing information on the World Wide Web that matches the  
information in said key phrase field, and for storing said accessed information in said  
10 columns if the accessed information further corresponds to said column headings.

2. The system of claim 1, whereby each of said plurality of cells being activatable  
to perform at least one action related to said stored information within said cell.

3. The system of claim 2, whereby said stored information includes a phone  
number, and said at least one action comprises connecting the system with said phone  
number.

4. The system of claim 2 whereby said stored information includes a facsimile number, and said at least one action comprises sending a facsimile to said facsimile number.

5. The system of claim 2, whereby said stored information includes an e-mail address, and said at least one action comprises sending an e-mail to said e-mail address.

6. The system of claim 5, whereby said at least one action further comprises sending a facsimile to said e-mail address or providing a voice connection to said e-mail address.

7. The system of claim 1, further including a cursor and an activity menu having a plurality of activity buttons; whereby each of said activity buttons defines an action related to said stored information within a cell.

8. The system of claim 4, whereby said cursor highlights a cell and said plurality of action buttons change to reflect said stored information.

9. The system of claim 1, whereby each row includes a row heading.

10. The system of claim 9, whereby said row headings and said column headings are interchangeable.

11. The system of claim 1, further including a centralized database for storing information, whereby said system accesses and retrieves information within said database.

12. The system of claim 11, further including a website, for maintaining said centralized database.

13. The system of claim 12, further including a plurality of databases, said plurality of databases being linked to said centralized database, whereby said system accesses and retrieves information within said plurality of databases.

14. The system of claim 13, further including an input unit, for inputting information into said centralized database.

15. The system of claim 14, further including a verification unit, for verifying said input information.

16. The system of claim 15, whereby said verification unit further includes tagging means, for tagging all input information with the date of entry, time of entry and origin of said input information.

17. A method for accessing and retrieving information on the internet comprising:  
creating a data table comprising a plurality of columns, each of said columns being selectively definable by a column heading, and at least one row having a plurality of cells corresponding to said plurality of columns, said row for storing information defined by said plurality of column headings;

defining a desired search with a key phrase field;

accessing information on the World Wide Web that matches the information in said key phrase field; and

storing said accessed information in said columns if the accessed information further corresponds to said column headings.

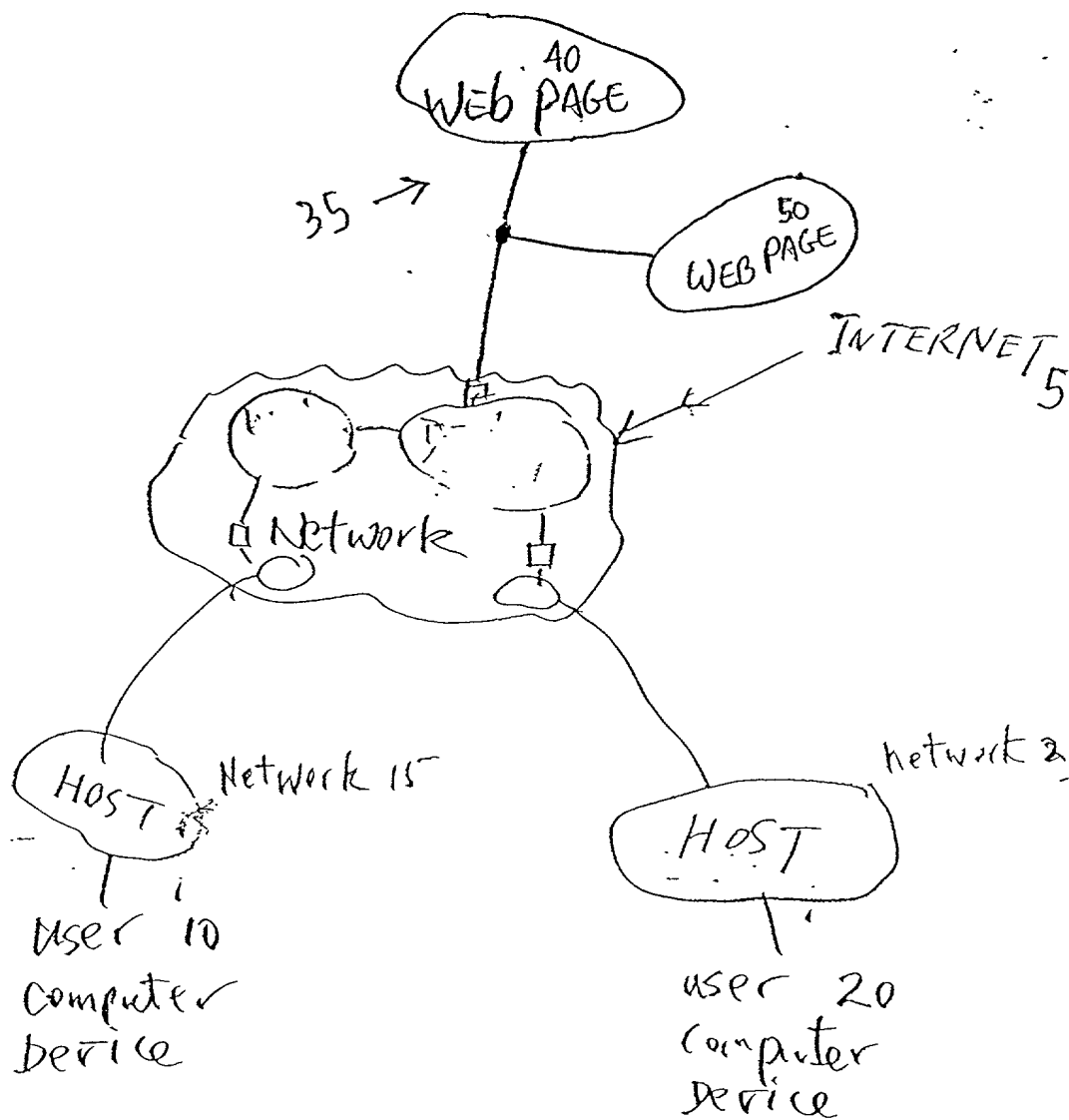
18. The method of claim 17, whereby said method further includes performing an action related to said stored information within said cell.

19. A method of using a computer network and a database accessible through the computer network, comprising the steps of defining the database with a plurality of columns,



## ABSTRACT

A data table that is customizable by a user prior to accessing the internet or after accessing the internet. The user may use a simple keyword, such as a telephone number or facsimile number, to begin the search of a database or multiple databases. Once the keyword has retrieved the proper information, the system populates the table. This permits the user to easily access the internet and retrieve e-mail addresses or other relevant information by providing a phone number, facsimile number or other information relating to the particular entity. Using the data table, the system displays all information related to the keyword input as unique individual identifiers such as e-mail, phone, facsimile number or website address. Selecting one of the unique individual identifiers prompts the system to automatically invoke further action, such as dialing a phone number.

[illegible]

(PRIOR ART)

Fig 1



```

graph TD
    Start([Start]) --> 100
    100 --> 105[User Login request]
    105 --> 110[ISP authenticates User ID & Password]
    110 --> 115{valid}
    115 -- NO --> 100
    115 -- YES --> 120[Call e-mail applications]
    120 --> 125{Create a new e-mail}
    125 -- YES --> 160
    125 -- NO --> 130{Reply to a received e-mail}
    130 --> 135{Add more receivers to the reply e-mail?}
    135 -- YES --> 160
    135 -- NO --> 100
    160 --> 140{User direct input the receiver's e-mail address}
    140 -- YES --> 165[Write the message]
    140 -- NO --> 145[View existing database to retrieve the receiver's e-mail address]
    145 --> 150{find the receiver's e-mail address}
    150 -- NO --> A((A))
    150 -- YES --> 160
    165 --> 170[Send e-mail]
    170 --> END([END])

```

FIG 2A

```
graph TD; A((A 180)) --> 160[160 abandon the e-mail process]; A --> 165[165 call online directory search service]; A --> 170[170 call the present invention]; 165 --> 166[166 enter search keyword(s) such as name, address, or URL]; 166 --> 167[167 search database for the corresponding e-mail address]; 167 --> 168[168 return the search result to calling program]; 170 --> 171[171 enter the e-mail receivers' phone number or Fax number as the primary search key phrase]; 171 --> 172[172 search the database for the corresponding e-mail address.]; 172 --> 173[173 return the search result to calling program];
```

FIG 28

181

INPUT E-mail Address, Phone #, FAX #  
or WEB site Address.

GO

182

Fig 3 A



Figure 1 displays 12 histograms arranged in a 6x2 grid, showing the distribution of the number of non-zero elements in the vector  $x$  for different values of  $n$ . The histograms are labeled as follows:

- Top row (left to right):  $n=10$ ,  $n=20$ ,  $n=30$ ,  $n=40$ ,  $n=50$ ,  $n=60$
- Bottom row (left to right):  $n=70$ ,  $n=80$ ,  $n=90$ ,  $n=100$ ,  $n=110$ ,  $n=120$

The x-axis for all histograms is 'Number of non-zero elements' and the y-axis is 'Frequency'. The distributions are roughly bell-shaped and centered around  $n/2$ .

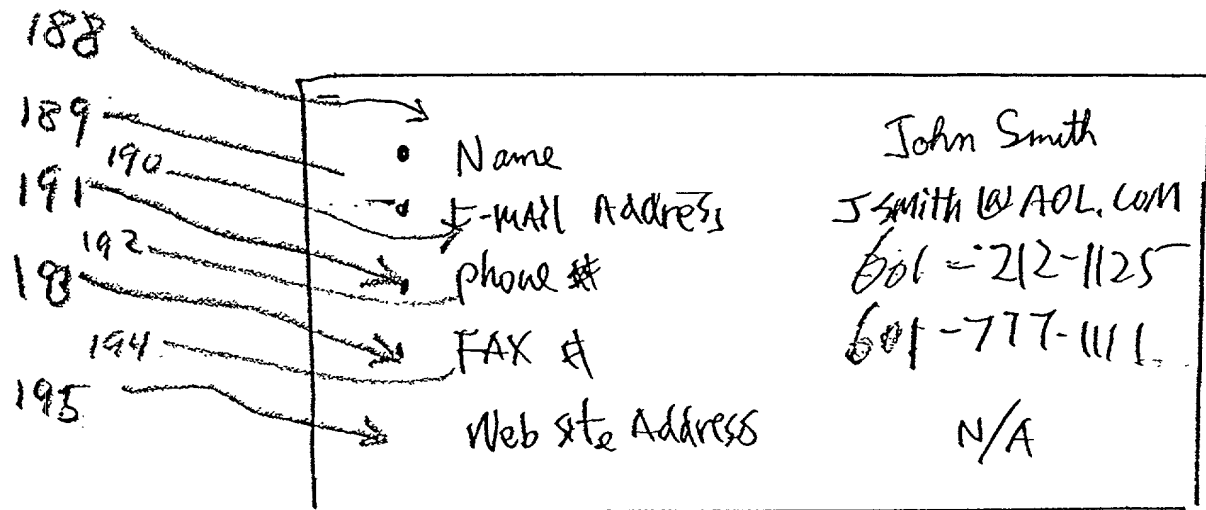


FIG 3c

195

196

157

1985

199

NAME

E MAIL Address

Mobile phone #

- Phone # (Home)

Phone # (work)

FAX #

JOHN SMITH

JSMITH@AOL.COM

888-242-2115

601-212-1125-

601-433-7126

60/- 777-1111

222 PARK AVE

Greentown, NJ 02112

Fig 3D







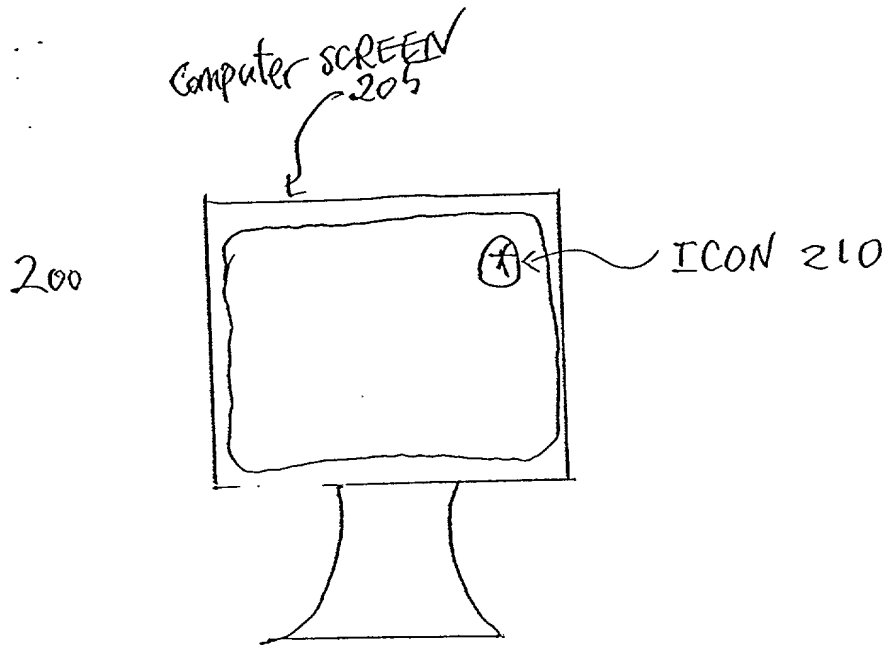
[illegible]

FIG 4A

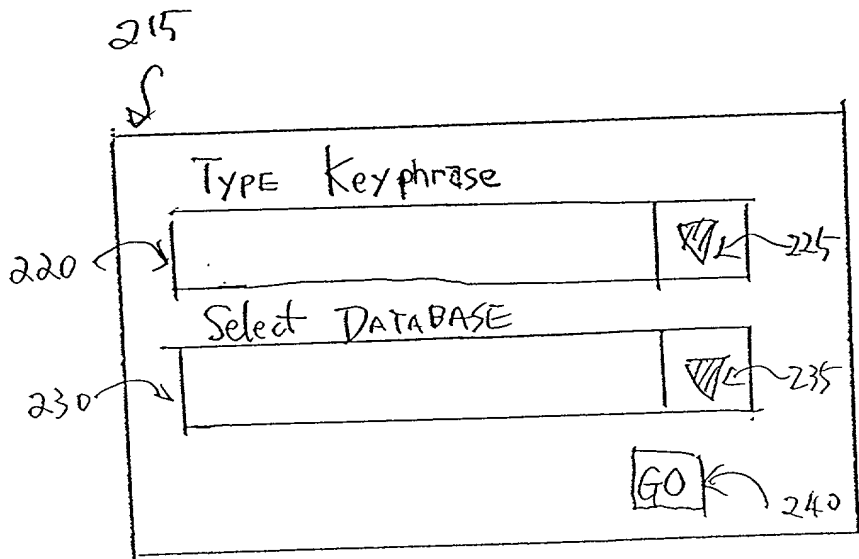


FIG 4B

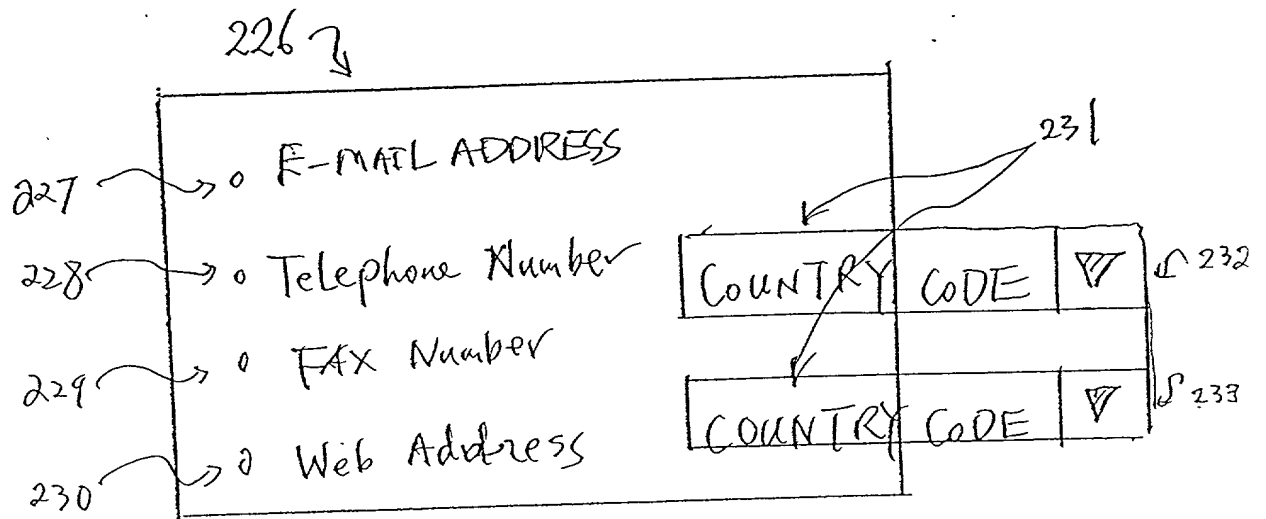


FIG 4C

5

United States

Zimbabwe

FIG 4D

[illegible]



[illegible]

FIG 4 F

FIG 4 F

235

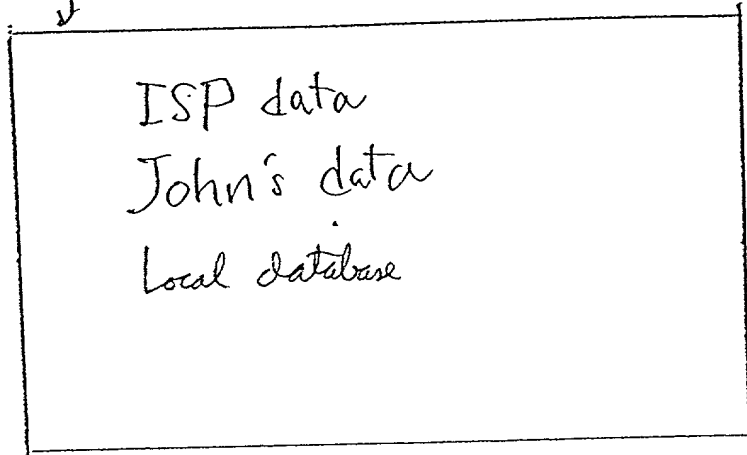


FIG 4G

005

25

504h  
7

5047-1

504 n-2

504c

EMAIL ADDRESS

BUSINESS  
PHONE NUMBER

NAME

٥٠٠

000

●  
●  
●

FIGURE 5A



500 KEYPHRASE : MARY ADAMS 21500 CUSTOMER SERVICE 500

510 TABLE HEADINGS ▼

- account number
- balance
- business address
- business facsimile number
- business phone number
- cellular phone number
- email address
- extension
- home address
- home facsimile number
- home page
- home phone number
- name
- pager number
- stock symbol
- title
- vacation home address
- vacation home facsimile number
- vacation home phone number
- create customized heading

502

NAME	TITLE	BUSINESS PHONE NUMBER	EXTENSION

504a 504b 504c 504d

FIGURE 5B

DOT COM TEST BED

KEYPHRASE: CISCO

500

NAME	BUSINESS FACSIMILE NUMBER	HOME PAGE	E MAIL ADDRESS	BUSINESS PHONE NUMBER	STOCK SYMBOL

502

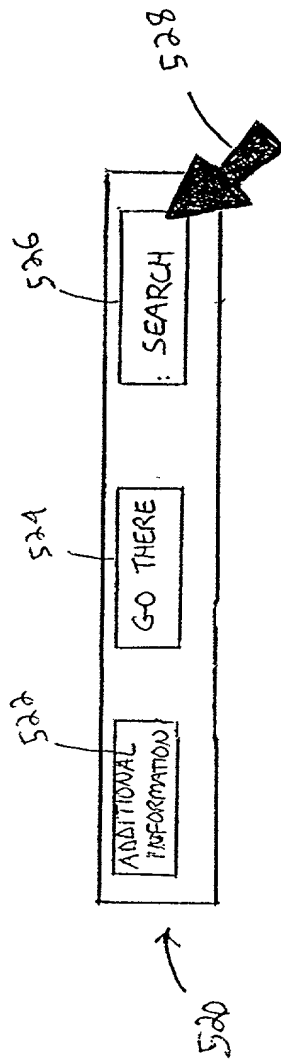


FIGURE 5C

KEYPHRASE: CISCO 500

DATA TABLE 552

NAME	BUSINESS FACSIMILE NUMBER	HOME PAGE	E MAIL ADDRESS	BUSINESS PHONE NUMBER	STOCK SYMBOL
CISCO SYSTEMS, INC. 550a	389-476-1212 MAIN NUMBER 550b	WWW.CISCO.COM	EMAIL@CISCO.COM MAIN ADDRESS 550c	389-471-1591 MAIN NUMBER 550d	CSCO 504f

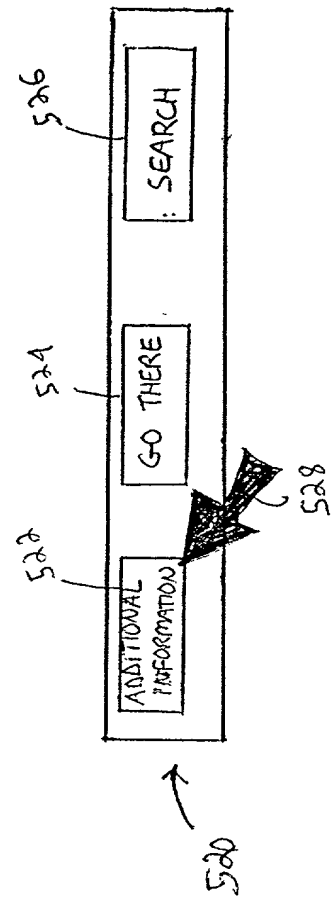


FIGURE 5D

010T030" T3T3B30

KEYPHRASE: CISCO 504a 504b 504c 504d 504e 504f

NAME	BUSINESS FACSIMILE NUMBER	HOME PAGE	E MAIL ADDRESS	BUSINESS PHONE NUMBER	STOCK SYMBOL
CISCO SYSTEMS, INC.	389-476-1212 MAIN NUMBER	WWW.CISCO.COM	EMAIL@CISCO.COM MAIN ADDRESS	389-471-1591 MAIN NUMBER	CSCO
TECHNICAL	389-476-1523 TECHNICAL SUPPORT		TECH@CISCO.COM TECHNICAL SUPPORT	389-471-2936 TECHNICAL SUPPORT	
SALES	389-476-1524 SALES		SALES@CISCO.COM SALES	389-471-1503 SALES	
CUSTOMER SERVICE	389-476-1895 CUSTOMER SERVICE		SERVICE@CISCO.COM CUSTOMER SERVICE	389-471-2001 CUSTOMER SERVICE	

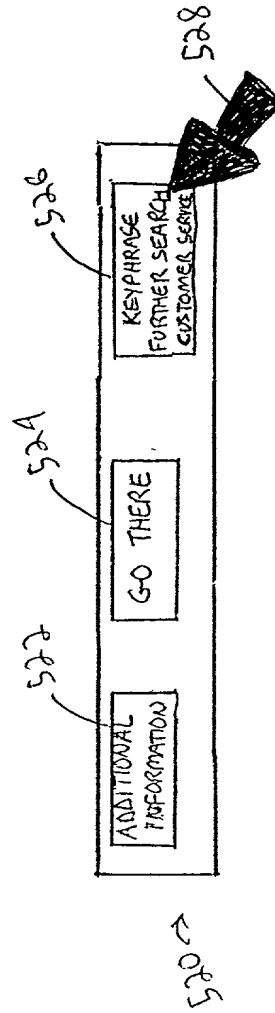


FIGURE 5E

500 KEYPHRASE : CUSTOMER SERVICE 504a 504b 504c 504d 504e 504h

502a

NAME	BUSINESS FACSIMILE NUMBER	TITLE	EMAIL ADDRESS	BUSINESS PHONE NUMBER	EXTENSION
KATE SKUBIN	389-476-1212 CUSTOMER SERVICE	GROUP DIRECTOR	KSKUBIN@CISCO.COM	389-471-1591 CUSTOMER SERVICE	3113
LISA CARDS	389-476-1212 CUSTOMER SERVICE	CUSTOMER SERVICE REPRESENTATIVE	LCARDS@CISCO.COM	389-471-1591 CUSTOMER SERVICE	3114
ROBIN NOLES	389-476-1212 CUSTOMER SERVICE	CUSTOMER SERVICE REPRESENTATIVE	RNOLES@CISCO.COM	389-471-1591 CUSTOMER SERVICE	3115
FRED KANES	389-476-1212 CUSTOMER SERVICE	CUSTOMER SERVICE REPRESENTATIVE	FKANES@CISCO.COM	389-471-1591 CUSTOMER SERVICE	3118

502b

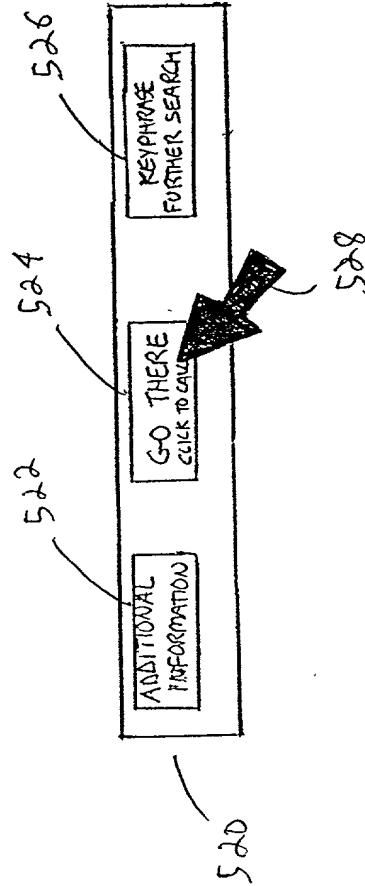


FIGURE 5F

Please type a plus sign (+) inside this box →

PTO/SB/01 (12-97)

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Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)</b>	<b>Attorney Docket Number</b>		<b>HIM-PT002.2</b>	
	<b>First Named Inventor</b>		<b>Richard B. Himmelstein</b>	
	<b>COMPLETE IF KNOWN</b>			
	<b>Application Number</b>			
	<b>Filing Date</b>			
	<b>Group Art Unit</b>			
<input checked="" type="checkbox"/> Declaration Submitted with Initial Filing	<b>OR</b>	<input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	<b>Examiner Name</b>	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**COMMUNICATION DEVICE FOR EFFICIENTLY ACCESSING INTERNET RESOURCES**

the specification of which  
☒ is attached hereto  
OR  
☐ was filed on (MM/DD/YYYY) [ ] as United States Application Number or PCT International Application Number [ ] and was amended on (MM/DD/YYYY) [ ] (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)
60/143,982	07/15/99
60/174,561	01/05/00

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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## DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/025 attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Customer Number		Place Customer Number Bar Code Label here	
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<input checked="" type="checkbox"/> Registered practitioner(s) name/registration number listed below			
Name	Registration Number	Name	Registration Number
Alfred Siapler	18,873	Glenn M. Massina	40,081
Anthony S. Volpe	23,377	Jeffrey M. Glabicki	42,584
C. Frederick Koenig III	29,002	Kao H. Lu	43,761
Randolph J. Huls	34,826		
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☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/026 attached hereto.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
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☐ Additional inventors are being named on the supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto